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TOOTH FILLING MATERIAL

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Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

Fig. 8

Fig. 9

Fig. 10

Fig. 11

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This invention relates generally to a tooth filling material and more particularly to a powdered gold and adhering gold foil or leaf cavity plug and method of construction.

One of the main objects of the invention is to provide a new type of gold filling material.

Another object of the invention is to provide a gold filling material that combines the use of powdered gold and gold foil or leaf.

The use of gold in various forms is well known in the dental art. It is a fundamental theory of the present invention to associate certain forms of gold in an entirely new and novel manner to provide a tooth filling material that is worked easily and provides a better and longer lasting filling.

Yet another object of the invention is to provide a powdered gold adhering gold foil plug or pellet of suitable tooth filling size.

Still another object of the invention lies in the provision of a gold foil enclosed or partially enclosed powdered gold cavity filling plug.

A further object of the invention is to provide powdered gold in a gold foil contained manner whereby segments of suitable filling size may be cut therefrom.

A still further object of the invention is to provide gold foil adhering gold pellets that are particularly adaptable as filling material.

The foregoing and other objects and advantages of the present invention will become apparent to those skilled in the art upon consideration of the following detailed description of the preferred embodiment thereof, reference being had to the accompanying drawings, herein:

FIGURE 1 is a perspective view partially cut away of a spherical gold foil encased powdered gold pellet forming a preferred embodiment of the invention;

FIGURE 2 is a perspective view of a cylindrical gold foil covered powdered gold tube that may be cut into suitable tooth filling sizes;

FIGURE 3 is a perspective view of a rectangular plug of gold foil encased powdered gold;

FIGURE 4 is a perspective view of a pellet formed in a polyhedron shape;

FIGURE 5 is a vertical sectional view of a pellet having a core of gold foil;

FIGURE 6 is a perspective view of a sandwich type gold foil and powdered gold sheet from which desired sizes of filling plugs may be cut;

FIGURE 7 is a perspective view of a laminated sheet form of gold foil and powdered gold filling material;

FIGURE 8 is a perspective view of a laminated spiral sheet that may be cut to desired filling sizes;

FIGURE 9 is a perspective view of a segment of filling material cut from FIGURE 6;

FIGURE 10 is a perspective view of a crimped gold foil covering for the powdered gold; and

FIGURE 11 is a perspective view in a form in which the powdered gold adheres to a sheet of gold foil.

Various forms of gold foil or gold leaf encased powdered gold have been shown in the drawings. The drawings also show cylindrical gold foil coverings of different shape from which filling segments or plugs of desired size may be cut. Laminated forms of filling material sheets have been shown. Partial and completely encased powdered gold elements appear in several of the figures in the drawings. It is intended by the plural views to show the many forms that specific application of the present invention could take. It is obvious that many alternative configurations are possible and would be suitable.

FIGURE 1 shows a gold filling pellet forming a preferred embodiment of the invention. A quantity of powdered gold 10 of substantially one-hundred mesh or finer is encased in a spherical manner by a gold foil or gold leaf coating 12. The shape of each individual granule may be essentially spherical or irregular. Gold leaf and gold foil are substantially the same and will be referred to hereafter as gold foil. The relative proportions of powdered gold and gold foil is immaterial. Any means, mechanical or otherwise, may be used to form the tooth filling pellet or plug generally designated F. The size of the cavity filling material or plug is immaterial. It will vary to suit the condition of use but usually between one and four millimeters.

The powdered gold 10 may or may not be annealed before coating with the gold foil 12. The gold foil covered pellet or plug F may or may not be annealed before use, according to individual preference of the dental operator. The cohesive nature of the gold foil 10 prevents fragmentation of the powdered gold as it is condensed into the cavity by means of various pluggers.

Gold foil alone is an old and excellent filling material. However, it is not workable in the quick and easy manner now made possible by association with powdered gold. The novel pellets of the present invention are plugged into the cavity in such manner that a filling of great hardness and density is accomplished.

Powdered gold is useable as a filling material but it is difficult to handle. Where a gold filling material is necessary and a gold filling or plug 1 for the gold foil, the minute granules prevent fragmentation when surrounded by the naturally cohesive coating and the pellet is in a form for easy manipulation by the dentist. The pellets of varied sizes are pre-formed and easily maintained for instant use. As stated previously, annealing of the prepared pellets before use is customary to insure cohesion thereof.

Although a preferred embodiment of the invention and manner of construction and use has been described, it is contemplated and intended that the combined powdered gold and gold foil be composed in many different forms and still provide an improved and excellent tooth filling plug. In FIGURES 2, 5 and 8, the powdered gold 10 is covered by a cylindrical gold foil cover in several forms. In FIGURE 2, a rod shaped mass of powdered gold 14 is surrounded by a gold foil coating 16 that overlaps at 18. The cylinder shaped filling material may be cut to desired size of filling pellet or plug. In FIGURE 5, the rod shaped filling material as above described has a core 22 of gold foil. In FIGURE 8, the open ended rod shaped filling material is formed by laminated spiraling of the gold foil sheet 24. The material is cut, annealed and used as described. An annealing process may attend the initial formation of the cylindrical filling material.

In FIGURES 3 and 4 it is intended to disclose certain of the forms that the pellet or plug F might take. In these figures, the powdered gold center is covered by gold foil in rectangular form in FIGURE 3 and in polyhedron configuration in FIGURE 4. Any type of oval hemispherical or flat sided form might also be used.

In FIGURE 6, the powdered gold 10 is sandwiched between outer gold foil coats 26 and 28 so that segments shown at 30 in FIGURE 9 may be cut therefrom in any workable and desired size. In FIGURE 7, the layers of powdered gold 10 are disposed between plural gold foil sheets 32 to form a laminated type of filling material that may also be cut into plugs of suitable tooth filling size.

In FIGURE 10, the mass or layer of powdered gold...
is covered by sheets of gold foil 34 crimped together at 36. In FIGURE 11, the simplest form of filling material comprises a cohesive gold foil sheet or portion thereof 38 upon which a mass or layer of powdered gold 10 adheres. Annealing of the powdered gold is optional at any time. The variously formed elements are all essentially the same in that powdered gold is combined with gold foil to form a new, useful and easily workable tooth filling material pellet. The filling made up finally of plural plugs, when compressed, consolidated, burnished and trimmed will form an entirely different and long lasting tooth saving structure.

While I have shown and described in considerable detail what I believe to be the preferred form of my invention, it will be apparent to those skilled in the art that many changes may be made in the shape and arrangement of the several parts without departing from the broad scope of the invention, as defined in the following claims.

I claim:
1. An individually formed dental filling having a maximum cross section not exceeding four millimeters comprising a gold foil wrapper and a body of discrete powdered gold particles enveloped by said wrapper.
2. A dental filling according to claim 1 having a circular cross section.
3. A dental filling according to claim 1 having a rectangular cross section.
4. A dental filling according to claim 1 having a polyhedron shape.
5. A dental filling according to claim 1 wherein said particles are enveloped between two layers of gold foil.

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